

CORROSION — 1983 INDEX

This index to the 12 issues of CORROSION published in 1983 includes the technical contents of each issue, an alphabetical subject index, and an alphabetical author index. To locate information published during 1983, refer to the designated month and page number. Reprints of articles published in CORROSION are available from NACE Headquarters, P.O. Box 218340, Houston, Texas 77218.

CORROSION — Technical Contents Index, Volume 39, 1983

January

- Effect of Silicate and Phosphate on the Fatigue Crack Growth Rates in Type 403 Stainless Steel in Concentrated Sodium Chloride and Sodium Hydroxide Solutions
W. T. Tsai, A. Moccari,
D. D. Macdonald 1

- The Effect of Arsenic on the Active-Passive Transition of Titanium
P. Millenbach, M. Givon 13

- Particle Adhesion and Removal in Model Systems. VII. Hematite Particles on Steel at 22 and 210 C
N. Kallay, E. Matijević 15

- Cathodic Protection Levels Under Disbonded Coatings
R. R. Fessler, A. J. Markworth,
R. N. Parkins 20

- Mechanisms of the Microbial Corrosion of Aluminum Alloys
R. C. Salvarezza, M. F. L. de Mele,
H. A. Videla 26

- Technical Note: Three-Point Method for Evaluating Corrosion Current and Tafel Slopes from a Single Polarization Curve
S. Barnartt, M. Donaldson 33

- Discussion: The Galvanic Corrosion of Steel in Sodium Chloride Solution
F. LaQue 35

February

- pH Measurements in Aqueous CO₂ Solutions Under High Pressure and Temperature
J. L. Crolet, M. R. Bonis 39

- A Comparison of Intergranular Attack in Inconel Alloy 600 Observed in the

- Laboratory and in Operating Steam Generators
G. P. Airey, F. W. Pement 46

- Anodic Protection of Mild Steel in Nitric Acid
T. P. Sastry, V. V. Rao 55

- Corrosion Measurements Derived from Small Perturbation Non-Linearity—Part 1: Harmonic Analysis
J. S. Gill, L. M. Callow,
J. D. Scantlebury 61

- The Effect of Potential and Caustic Concentration on the Stress Corrosion Cracking of NiCrMoV Steel at 100 C
R. S. Shalvoy 66

- Technical Note: Observations on Hydrogen Induced Delayed Plasticity and Cracking in 4340 Steel
J. A. Wert 71

- Discussion: The Kinetics of Hydrogen Absorption and Evolution on a Carbon-Manganese Steel Exposed to Acidified Solutions of Sodium Chloride
R. Driver 74

March

- Phosphate Precipitation in Corrosion Protection: Reaction Mechanisms
G. H. Nancollas 77

- Higher Hardenability Low Alloy Steels for H₂S-Resistant Oil Country Tubulars
R. Garber 83

- The Stress Corrosion Behavior of Glassy Fe-40Ni-20B Alloy in Aqueous Acidic Media
M. D. Archer, R. J. McKim 91

- Comparison of Several Accelerated Laboratory Tests for the Determination

- of Localized Corrosion Resistance of High Performance Alloys
P. E. Manning 98

- An Investigation of the Use of Modulus Measurements to Detect Stress Corrosion Cracking in 304 Stainless Steel
S. H. Carpenter, O. W. Siebert 103

- Simulated Underfilm Corrosion of Coated Mild Steel Using an Artificial Blister
J. D. Scantlebury, A. Guiseppi-Elie,
D. A. Eden, L. M. Callow 108

- NACE and NBS Enter a Cooperative Corrosion Data Agreement 114

April

- Anomalous Corrosion of Hydrogen-Containing Ferritic Steels in Aqueous Acid Solution
M. Hasegawa, M. Osawa 115

- Stress Corrosion Cracking Characterization of 3.5 NiCrMoV Low Pressure Turbine Rotor Steels in NaOH and NaCl Solutions
F. F. Lyle, Jr. 120

- Sensitization of Austenitic Stainless Steels, II. Commercial Purity Alloys
R. A. Mulford, E. L. Hall,
C. L. Briant 132

- Electrochemical Etching of Copper Ion Implanted H-19 Aluminum in Aqueous Chloride/Sulfate Solution at 95 C
S. M. Florio, W. M. Moore,
G. A. Hutchins, S. E. Summers 151

- The Anodic Dissolution of a Ni-Base Superalloy
M. A. Cavanaugh, J. A. Kargol,
J. Nickerson, N. F. Fiore 144

May

- The Effect of Environment, Cold Work, and Crystallography on the Stress Corrosion Cracking of C36000 Alloy
S. Erzurum, H. C. Yeh 161

- SCC of Zirconium and Its Alloys in Nitric Acid
T. L. Yau 167

- Hydrogen Permeability and Diffusivity in Nickel and Ni-Base Alloys
R. M. Latanision, M. Kurkela 174

- Electrogalvanic Finite Element Analysis of Partially Protected Marine Structures
R. G. Kasper, M. G. April 181

- Whitney Award Lecture—1983 Towards a Better Understanding of Corrosion Beneath Organic Coatings
H. Leidheiser, Jr. 189

- Technical Note: A Long-Lived External Ag/AgCl Reference Electrode for Use in High Temperature/Pressure Environments
M. J. Danielson 202

- Discussion: Reaction Rate Studies for the Corrosion of Metals in Acids, I. Iron in Mineral Acids
F. B. Growcock, W. W. Frenier 204

June

- Absorption of Hydrogen by Austenitic Steels
T. Zakroczyński,
Z. Szklarska-Smiałowska,
M. Smiałowski 207

- The Influence of High Strength Cold Rolled Steel and Zinc Coated Steel Surface Characteristics on Phosphate Pretreatment
J. A. Kargol, D. L. Jordan,
A. R. Palermo 213

- The Effects of Iron on the Corrosion Resistance of Zirconium
T. L. Yau, R. T. Webster 218

- Pitting-Resistant Alloys in Highly Concentrated Chloride Media
R. Bandy, D. Van Rooyen 227

- An ESCA Study of Sulfidation of Fe-25 Wt% Cr Alloy in H₂S at 50 to 400 C
P. B. V. Narayan, J. W. Anderegg,
C. N. Carlson 236

- Early Steps in the Anodic Oxidation of Iron in Aqueous Solution
G. T. Burstein, G. W. Ashley 241

- Technical Note: Computer Simulation for the Intergranular Corrosion of Alloy 800
A. Borello, S. Casadio,
A. Mignone 247

- Discussion: Deposition Rate of Suspended Hematite in a Boiling Water System Under BWR Conditions
P. Cohen 250

July

- Effect of Surfactants Upon Corrosion Inhibition of High-Strength Steels and Aluminum Alloys
M. Khobaib, L. Quackenbush,
C. T. Lynch 253

- An Autoradiographic Technique for Studying the Segregation of Hydrogen Absorbed into Carbon and Low Alloy Steels
T. D. Le, B. E. Wilde 258

- On the Electrochemical Behavior of Anodic Oxide Films on Tungsten in Phosphate Solutions
M. M. Hefny, M. S. El-Basouny,
A. S. Mogoda 266

- The Influence of Structure on the Corrosion of Glassy Copper-Zirconium Alloys
J. C. Turn, Jr., R. M. Latanision 271

- Intergranular Corrosion of Type 304 Stainless Steel and Alloy 600 in Aqueous Solutions Containing SO₂
M. Da Cunha Belo, C. Bombart,
Ph. Berge 279

- Analysis of Oxide Wedging During Environment Assisted Crack Growth
S. J. Hudak, Jr., R. A. Page 285

- Technical Note: Investigations into Corrosion in Marine Atmospheres by Electrochemical Measurements
S. K. Roy 291

- Technical Note: A Novel Corrosion Monitor Based on the Faradaic Rectification Technique
J. S. Gill, L. M. Callow, G. A. M. Sussez,
J. D. Scantlebury 293

- Technical Note: Rapid Sampling of Metals for Chemical Analysis
J. H. Van Der Kuur,
D. R. Weisenberg 294

- Discussion: The Study of Inhibitors for Sour Gas Service
C. M. Blair, Jr. 296

August

- Electrochemical Behavior of Steel in Salt Contaminated Concrete: Part I
C. Dehghanian, C. E. Locke 299

- Electrochemical Studies of Crevice Corrosion Rates on Stainless Steels
D. Tromans, L. Frederick 305

- The Effect of Dissolved Oxygen and NO₃⁻ Anions on the Stress Corrosion Cracking of Type 304 Stainless Steel in Water at 290 C
H. Hirano, N. Aoki, T. Kurosawa 313

- Corrosion Cracking Phenomena Under Different Polarizing and Microstructural Conditions in a 304 Stainless Steel Tested in Low Temperature Acid Solutions
K. Bilogan 323

- Technical Note: Anodic Polarization Characteristics of Sensitized 304 Austenitic Stainless Steel in Polythionic Acid Environment
S. Ahmad, M. L. Mehta, S. K. Saraf,
I. P. Saraswat 330

- Effect of Polythionic Acid Concentration on Stress Corrosion Cracking of Sensitized 304 Austenitic Stainless Steel
S. Ahmad, M. L. Mehta, S. K. Saraf,
I. P. Saraswat 333

September

- Biography: Morris Cohen
M. J. Graham 341

- Preliminary Observations on Corrosion of Carbon Steel in Permafrost
W. E. White, R. J. King,
K. E. W. Coulson 346

- Technical Note: Crevice Corrosion in Inconel 600—Steel Systems in Seawater Containing Corrosion Accelerators at 288 C
H. Leidheiser, Jr., R. D. Granata 354

- The Use of Infrared and Raman Spectroscopy to Study Corrosion Inhibitors on Metal Surfaces
P. F. Lynch, C. W. Brown,
R. Heidersbach 357

- Discussion: The Effect of Potential and Caustic Concentration on the Stress Corrosion Cracking of NiCrMoV Steel at 100 C
J. E. Reinhoel, R. S. Shalvoy 363

- On the Sulfide Stress Cracking of Line Pipe Steels
J. C. Turn, B. E. Wilde,
C. A. Troianos 364

- Discussion: Cathodic Protection Levels Under Disbonded Coatings
J. E. Reinhoel, R. R. Fessler,
A. J. Markworth, R. N. Parkins 370

- The Use of Sodium Dichromate Pretreatment for Enhanced Marine Corrosion Resistance of C70600
T. S. Lee 371

- Technical Note: A New Apparatus for Synergistic Studies of Corrosive Wear
R. A. Buchanan, G. D. Turner,
P. D. Gray, J. G. Melendez, T. F. Talbot,
J. L. McDonald 377

October

- Stress Corrosion Cracking of AA 7075-T651 in Various Electrolytes—Statistical Treatment of Data Obtained

Using DCB Precracked Specimens R. T. Foley, A. H. Le	379	in Deaerated Chloride/Sulfate Solutions at 290 C D. J. Duquette, A. Poznansky	425	Measurements K. Kasahara, F. Kajiyama	475
Technical Note: Effect of Surface Oxide on Gun Barrel Wear J. R. Ward, I. C. Stobie, R. P. Kaste, B. D. Bensinger	384	Technical Note: The Effect of Shot Peen- ing on the Polarization Behavior of Steel W. J. Tomlinson, K. P. Smith	432	Technical Note: Inhibitive Action of Ben- zoic Acid and Its Derivatives on Dissolu- tion of Aluminum Alloys in Nitric Acid C. V. Agarwal, C. Chakrabarty, M. M. Singh	481
Environmental Variables in the Low Temperature Stress Corrosion Cracking of Inconel 600 R. C. Newman, R. Roberge, R. Bandy	386	Metallurgical Influences on the Hydrogen Uptake by Steel in H ₂ S En- vironment Y. Yoshino	435	Environmental Conditions Leading to Pitting/Crevice Corrosion of a Typical 12% Chromium Stainless Steel at 80 C A. Atrens	483
Low Temperature Stress Corrosion Cracking of Sensitized Inconel 600 Tetrathionate and Thiosulfate Solutions R. C. Newman, R. Bandy, R. Roberge	391	The Advantages of Galvanostatic Polarization Resistance Measurements D. A. Jones	444	Technical Note: Absence of Cr(IV) in the EMF-pH Diagram for Chromium D. C. Silverman	488
Corrosion Behavior of Nickel in Concen- trated NaOH Solutions Under Heat Transfer Conditions F. Hine, M. Yasuda, F. Takeya	399	Technical Note: Loading Mode and Stress Corrosion Cracking Mechanisms F. A. Nichols	449	On the Mechanism for Improved Passivation by Additions of Tungsten to Austenitic Stainless Steels F. Dabosi, N. Bui, A. Irhzo, Y. Limouzin-Maire	491
Technical Note: Open Circuit Potential Measurements for Type 304, Alloy 600, Nickel, and Platinum in 250 C Water; The Effect of Chromate and Nitrate Addi- tions J. B. Lee, R. W. Staehle	406	An Analysis of Mass Transfer in Fillform Corrosion T. R. Beck, R. T. Ruggeri	452	Inhibition of Carbon Steel Corrosion in Chemical Cleaning Solutions Contain- ing Solid Magnetites R. Gilbert, R. Roberge	496
Stress Corrosion Cracking of Alloy 600 and 690 and Nos. 82 and 182 Weld Metals in High Temperature Water R. A. Page	409	Technical Note: Corrosion Rates from Impedance Measurements: An Improved Approach for Rapid Automatic Analysis M. Kendig, F. Mansfeld	466	The Effect of Heat Treatment Parameters on the Anodic Polarization Behavior of 440C Stainless Steel T. L. Walzak, J. S. Sheasby	502
November		December		Corrosion Cracking Phenomena Under Different Polarizing Microstructural Con- ditions in a 304 Stainless Steel Tested in Low Temperature Acid Solutions K. Bilogan	508
Stress Corrosion Cracking of Annealed and Sensitized Type 304 Stainless Steel		Modification of the ASTM Standard Fer- ric Sulfate-Sulfuric Acid Test and Copper-Copper Sulfate-Sulfuric Acid Test for Determining the Degree of Sen- sitzation of Ferritic Stainless Steels J. B. Lee	469		
		Determination of Underground Corro- sion Rates from Polarization Resistance			

CORROSION — Alphabetical Author Index, Volume 39, 1983

A	C	F
Agarwal, C. V. (12)481	Callow, L. M. (3)108; (7)293	Fiori, N. F. (4)144
Ahmad, S. (8)330; (8)333	Carlson, O. N. (6)236	Florio, S. M. (4)151
Airey, G. P. (2)46	Casadio, S. (6)247	Foley, R. T. (10)379
Anderegg, J. W. (6)236	Cavanaugh, M. A. (4)144	Frederick, L. (8)305
April, M. G. (5)181	Chakrabarty, C. (12)481	Frenier, W. W. (5)204
Archer, M. D. (3)91	Coulson, K. E. (9)346	
Ashley, G. W. (6)241	Crolet, J. L. (2)39	G
Atrens, A. (12)483		Garber, R. (3)83
Auki, N. (8)313		Gilbert, R. (12)496
B	D	Gill, J. S. (2)61; (7)293
Bandy, R. (6)227; (10)386; (10)391	Da Cunha Belo, M. (7)279	Givon, M. (1)13
Barnartt, S. (1)33	Dabosi, F. (12)491	Graham, M. J. (9)341
Beck, T. R. (11)452	Danielson, M. J. (5)202	Granata, R. D. (9)354
Berge, Ph. (7)279	De Mele, M. F. (1)26	Gray, P. D. (9)377
Bilogan, K. (8)323	Dehghanian, C. (8)299	Growcock, F. B. (5)204
Blair, Jr., C. M. (7)296	Donaldson, M. (1)33	Guiseppi-Elie, A. (3)108
Bombart, C. (7)279	Driver, R. (2)74	
Bonis, M. R. (2)39	Duquette, D. J. (11)425	H
Borello, A. (6)247		Hall, E. L. (4)132
Briant, C. L. (4)132	E	Hamby, T. W. (10)384
Brown, C. W. (9)357	Eden, D. A. (3)108	Hasegawa, M. (4)115
Buchanan, R. A. (9)377	El-Basouny, M. S. (7)266	Hefny, M. M. (7)266
Bui, N. (12)491	Erzurum, S. (5)161	Heidersbach, R. (9)357
Burstein, G. T. (6)241		Hinchcliffe, D. (10)384
	F	Hine, F. (10)399
	Fessler, R. R. (1)20; (9)370	Hirano, H. (8)313

Hudak, Jr., S. J. (7)285
Hutchins, G. A. (4)151

I, J

Irhzo, A. (12)491
Iwahori, T. (3)113
Jones, D. A. (11)444
Jordan, D. L. (6)213

K

Kajiyama, F. (12)475
Kallay, N. (1)15
Kargol, J. A. (4)144;(6)213;(11)425
Kasahara, K. (12)475
Kasper, R. G. (5)181
Kendig, M. W. (11)466
Khobaib, M. (7)253
Kim, C. D. (2)74
King, R. J. (9)346
Kurkela, M. (5)174
Kouno, T. (7)296

L

LaQue, F. L. (1)36
Latanision, R. M. (5)174;(7)271
Le, A. H. (10)379
Lee, J. B. (10)406;(12)469
Lee, T. S. (9)371
Leidheiser, Jr., H. (5)189;(9)354
Limouzin-Maire, Y. (12)491
Locke, C. E. (8)299
Lyle, Jr., F. F. (4)120
Lynch, C. T. (7)253
Lynch, P. F. (9)357

M

Macdonald, D. D. (1)1
Manning, P. E. (3)98
Mansfeld, F. B. (11)466
Markworth, A. J. (1)20;(9)370
Mathur, P. B. (5)204
Matijevic, E. (1)15
McDonald, J. L. (9)377
McKim, R. J. (3)91
Mehta, M. L. (8)330;(8)333

Melendez, J. G. (9)377
Mignone, A. (6)247
Millenbach, P. (1)13
Miyase, S. (1)36
Mizuno, T. (3)113
Moccari, A. X. (1)1
Mogoda, A. S. (7)266
Moore, W. M. (4)151
Mulford, R. A. (4)132
Murata, T. (7)296

N

Nancollas, G. H. (3)77
Narayan, P. B. (6)236
Newman, R. C. (10)386;(10)391
Nichols, F. A. (11)449
Nickerson, J. (4)144

O, P, Q

Osawa, M. (4)115
Page, R. A. (7)285;(10)409;(12)507
Palermo, A. R. (6)213
Parkins, R. N. (1)20;(9)370
Pement, F. W. (2)46
Poznansky, A. (11)425
Prime, Jr., J. B. (10)384
Quakenbush, L. (7)253

R

Rao, V. V. (2)55
Reinoehl, J. E. (9)363;(9)370
Roberge, R. (10)386;(10)391;(12)496
Roy, S. K. (7)291
Ruggeri, R. T. (11)452

S

Salvarezza, R. C. (1)26
Saraf, S. K. (8)330;(8)333
Saraswat, I. P. (8)330;(8)333
Sastry, T. P. (2)55
Sato, E. (7)296
Scantlebury, J. D. (2)61;(3)108;(7)293
Shalvoy, R. S. (2)66;(9)363
Sheasby, J. S. (12)502
Silverman, D. C. (12)488

Singh, M. M. (12)481
Smialowski, M. (6)207
Smith, K. P. (11)432
Staehle, R. W. (10)406
Summers, S. E. (4)151
Surosawa, T. (8)313
Sussec, G. A. (7)293
Suzuki, K. (7)296
Szkarska-Smialowska, Z. (6)207

T

Takeya, F. (10)399
Talbot, T. F. (9)377
Tomlinson, W. J. (11)432
Town, J. (10)384
Troianos, C. A. (9)364
Trumans, D. (8)305
Tsai, W. T. (1)1
Tsujino, B. (1)36
Turn, Jr., J. C. (7)271;(9)364
Turner, G. D. (9)377
Tuyen, D. L. (7)258

V

Van Der Kurr, J. H. (7)294
Van Rooyen, D. (6)227
Vasudevan, T. (5)204
Videla, H. H. (1)26

W

Wada, K. (3)113
Walzak, T. L. (12)502
Webster, R. T. (6)218
Weisenberg, D. R. (7)294
Wert, J. A. (2)71
White, W. E. (9)346
Wilde, B. E. (2)74;(7)258;(9)364

Y

Yasuda, M. (10)399
Yau, T. L. (5)167;(6)218
Yeh, H. C. (5)161
Yoshino, Y. (11)435

Z

Zakroczymski, T. (6)207
Zimmerman, R. P. (5)204

CORROSION — Alphabetical Subject Index, Volume 39, 1983

This subject index of CORROSION, Volume 39, is derived from controlled printout of the indexing terms taken from the NACE Corrosion Science and Technology Indexing Outline which is used for computer entry of topical indexes of all NACE publications. Additional information about the indexing outline and use of computerized access to NACE literature is available from: Information Service, NACE, P.O. Box 218340, Houston, Texas 77218.

A

Abrasion, causes: finite element analysis of marine structures, (5)181
Absorption, causes: H permeability of nickel and Ni-base alloy, (5)174

ABSORPTION, MATERIALS, CAUSES
ferritic steels with hydrogen vs acids, (4)115
H absorption on C-Mn steel vs acid NaCl, (2)74
metallurgical effects on steel vs H₂S, (11)435

ACCELERATED LAB TESTING
accelerated tests CrNi vs pitting, crevices, (3)98
corrosion beneath organic coatings, (5)189
SCC Cr-Ni-Fe + weld metals in hi temp mat, (10)409
sensitization austenitic SS - II commercial purity, (4)132

Acetic acids, causes: inhib chemical cleaning solution for carbon steel, (12)496
Acid surface preparation: SCC of Zr and alloys in nitric acid, (5)167

ACIDS, AQUEOUS, CAUSES
cracking of 304 in low temp acid solution, (8)323
hydrogen absorption by austenitic SS, (6)207

Acids, inorganic, causes: metal reactions in acids-I iron in mine, (5)204
Acids, organic, causes: microrial corrosion of aluminum alloys, (1)26
Adhesion, causes: particle activity-VII hematite on steel, (1)15

ADHESION, MATERIALS EFFECTS
cathodic protection vs disbonded coatings, (1)20
particle activity-VII hematite on steel, (1)15
steel, Zn coatings influence on phosphating, (6)213

Air, causes: Si,P vs cracks in 403 SS in NaCl, NaOH, (1)1
Alkaline water, applications of inhibitors

to: intergranular attack alloy 600 in steam, (2)46
Alkaline, aqueous, causes: pH in aqueous CO₂ solution under hi pressure, (2)39

ALLOYING PREVENTION AND CONTROL
alloy pitting in concentrated chlorides, (6)227
computer simulation intergranular attack, (6)247
corrosion beneath organic coatings, (5)189
ferric sulfate sensit test modification, (12)469
ferritic steels with hydrogen vs acids, (4)115
H permeability of nickel and Ni-base alloy, (5)174
hardenable steels for H₂S resistant tubes, (3)83
passivation of austenitic SS by, (12)491
SCC glassy Fe 40Ni 20B in acid waters, (3)91
sensitization austenitic SS-II commercial purity, (4)132
structure infl on glassy Cu-Zr alloys, (7)271

Alloying, materials, causes: iron effects on zirconium corrosion, (6)218
Alternating current, accel lab testing: impedance analysis of corrosion rates, (11)466

ALUMINUM
benzoic acid inhibitors for Ni in HNO₃, (12)481
etching of Cu ion implanted Al in Cl-sulfate, (4)151
microrial corrosion of aluminum alloys, (1)26
surfactants & inhibitors for Al, hi strength steel, (7)253

Aluminum, wrought, 7000: SCC Al-Cr-Cu-Fe-Mg-Mn-Si-Ti-Zn vs sodium, (10)379
American Petroleum Inst. Standards: sulfide stress cracking of linepipe steel, (9)364
Ammonia, causes: env + cold work vs SCC of copper-zinc, (5)161

ANODIC ELECTRODE PHENOMENA
anodic dissolution of Ni-base superalloy, (4)144
anodic films on W in phosphate solutions, (7)266
anodic oxidation of Fe in aqueous solutions, (6)241
anodic polar sensitized SS in polythionic, (8)330
arsenic influence on passivation of titanium, (1)13
corrosion beneath organic coatings, (5)189
corrosion vs sine wave distortion -pt 1, (2)61
current and Tafel slope evaluation mode, (1)33
finite element analysis of marine structures, (5)181
heat treat vs anodic polar of Cr steel, (12)502

ANODIC INHIBITORS
Cr oxide analysis re Pourbaix diagram, (12)488
Cr + N ions vs Cr-Ni, Ni Pt 250C water, (10)406

Anodic protection: anodic protection of mild steel in nitric acid, (2)55
Aqueous chemical, causes: Env + cold work vs SCC of copper-zinc, (5)161

AQUEOUS ENVIRONMENTS, CAUSES
anodic oxidation of Fe in aqueous solution, (6)241
phosphate precipitation mechanisms, (3)77
SCC glassy Fe 40Ni 20B in acid waters, (3)91
Arctic, Antarctic atmospheric on-site testing: carbon steel reactions in permafrost, (9)346
Arctic, Antarctic, geographical: carbon steel reactions in permafrost, (9)346
Area effect, galvanic cells, causes: disc-galvanic attack on steel in NaCl, (1)36

ARSENIC
arsenic influence on passivation of titanium, (1)13
H permeability of nickel and Ni-base alloy, (5)174

hydrogen absorption by austenitic SS, (6)207

ASCORBIC ACID, CAUSES

anodic polar sensitized SS in polythionic, (8)330

intergranular attack alloy 600 in steam, (2)46

SCC Cr-Ni-Fe vs low temp sulfur solution, (10)391

SCC glassy Fe 40Ni 20B in acid waters, (3)91

SCC of sensitized 304 SS in polythionic, (8)333

Asia, geographical: marine atmosphere attack electrochem measurement, (7)291

ATMOSPHERIC, CAUSES

AISI 304, alloy 600 vs aqueous S dioxide, (7)279

marine atmosphere attack electrochem measurement, (7)291

Atomic effects: loading mode effects on SCC tests, (11)449

Atomic radiation causes: metal sampling for corrosion analysis, (7)294

AUTOCLAVE TESTING

Cr+N ions vs Cr-Ni Ni Pt 250C water, (10)406

SCC Cr-Ni-Fe + weld metals in hi temp mat, (10)409

B

Benzoates, bases and salts, causes: surfactants & inhibitors for Al, hi strength steel, (7)253

Benzoic acid inhibitors: benzoic acid inhibitors for Ni in HNO₃, (12)481

Benzotriazoles and other acid inhibitors: inhib chemical cleaning solution for carbon steel, (12)496

BIBLIOGRAPHIES

biography - Morris Cohen, July 10, 1915, (9)341

mass transfer effects in filiform attack, (11)452

Biographies: biography - Morris Cohen, July 10, 1915, (9)341

Blistering, coatings: reactions under a coating blister on steel, (3)108

Borates, inorganic inhibitors: surfactants & inhibitors for Al, hi strength steel, (7)253

Boric acid, causes: SCC Cr-Ni-Fe vs 20-80C H₃BO₃ + Na₂SO₄, (10)386

BORON

H permeability of nickel and Ni-base alloy, (5)174

SCC glassy Fe 40Ni 20B in acid waters, (3)91

C

Calcium chloride, causes: microrial corrosion of aluminum alloys, (1)26

CALCIUM, CAUSES

pH in aqueous CO₂ solution under hi pressure, (2)39

phosphate precipitation mechanisms, (3)77

CALCULATIONS

cathodic protection vs disbonded coating, (1)20

corrosion vs sine wave distortion -pt 1, (2)61

current and Tafel slope evaluation mode, (1)33

finite element analysis of marine structures, (5)181

H absorpt on C-Mn steel vs acid NaCl, (2)74

H permeability of nickel and Ni-base alloy, (5)174

metal reactions in acids-I iron in mine, (5)204

oxide wedging during crack growth, (7)285

CAPACITANCE TESTS, ELECTRICAL

corrosion beneath organic coatings, (5)189

etching of Cu ion implanted Al in Cl-sulfate, (4)151

Carbide materials: sensitization austenitic SS-II commercial purity, (4)132

Carbides, metal structure: metallurgical effects on steel vs H₂S, (11)435

CARBON DIOXIDE, CAUSES

microrial corrosion of aluminum alloys, (1)26

pH in aqueous CO₂ solution under hi pressure, (2)39

CARBON STEEL, WROUGHT

anodic prot mild steel in nitric acid, (2)55

carbon steel reactions in permafrost, (9)346

crevice attack on Inconel-steel vs seawater, (9)354

disc- inhibitors for sour gas, (7)296

inhib chemical cleaning solution for carbon steel, (12)496

marine atmos. attack electrochem measurement, (7)291

metal reactions in acids-I iron in mine, (5)204

radiographic study H absorb C, alloy steel, (7)258

reactions under a coating blister on steel, (3)108

shot peening infl polarization of steel, (11)432

steel, Zn coatings infl on phosphating, (6)213

sulfide stress cracking of linepipe steel, (9)364

Carbonate bases and salts, causes: cathodic protection vs disbonded coating, (1)20

Carbonates, causes: carbon steel reactions in permafrost, (9)346

Carpenter 20-CB3: accel tests CrNi vs pitting, crevices, (3)98

Casting, materials, causes: iron effects on zirconium corrosion, (6)218

CATHODIC ELECTRODE PHENOMENA

corrosion beneath organic coatings, (5)189

corrosion vs sine wave distortion -pt 1, (2)61

current and Tafel slope evaluation mode, (1)33

H permeability of nickel and Ni-base alloy, (5)174

CATHODIC PROTECTION

cathodic protection vs disbonded coating, (1)20

disc- cath protection vs disbonded coatings, (9)370

finite element analysis of marine structures, (5)181

reactions under a coating blister on steel, (3)108

CHEMICAL OR ELECTROCHEMICAL, LAB TESTING

crevice corrosion rates on 304, 316L, 904L, (8)305

etching of Cu ion implanted Al in Cl-sulfate, (4)151

Faradaic rectification corrosion monitor, (7)293

finite element analysis of marine structure, (5)181

H permeability of nickel and Ni-base alloy, (5)174

Na dichromate on CuNi vs marine environment, (9)371

oxide wedging during crack growth, (7)285

polar resistance measurement, underground rates, (12)475

SCC of Zr and alloys in nitric acid, (5)167

steel, Zn coatings, infl on phosphating, (6)213

structure infl on glassy Cu-Zr alloys, (7)271

Chemical surface preparation: inhib chemical cleaning solution for carbon steel, (12)496

CHLORATES, BASES AND SALTS, CAUSES

Ni vs NaOH under heat transfer condition, (10)399

SCC Al-Cr-Cu-Fe-Mg-Mn-Si-Ti-Zn vs sodium, (10)379

CHLORIDES, BASES AND SALTS, CAUSES

alloy pitting in concentrated chlorides, (6)227

corrosion beneath organic coatings, (5)189

crevice attack on Inconel-steel vs seawater, (9)354

mass transfer effects in filiform attack, (11)452

microrial corrosion of aluminum alloys, (1)26

pitting-crevice attack 12Cr steel at 80C, (12)483

SCC Al-Cr-Cu-Fe-Mg-Mn-Si-Ti-Zn vs sodium, (10)379

SCC sensitized 304 in chloride-sulfate, (11)425

surfactants & inhibitors for Al, hi strength steel, (7)253

Chromates, bases and salts, causes: Na dichromate on CuNi vs marine environ, (9) 371

CHROMIUM

sensitization austenitic SS-II commercial purity, (4)132

O₂ + nitrate anions vs 304 in 290C water, (8)313

CITRIC ACIDS, CAUSES

inhib chemical cleaning solution for carbon steel, (12)496

microrial corrosion of aluminum alloys, (1)26

Cleaning, prevention and control: particle activity-VII hematite on steel, (1)15

Coatings, testing: finite element analysis of marine structures, (5)181

COLD FABRICATION, MATERIALS, CAUSES

ferritic steels with hydrogen vs acids, (4)115

H permeability of nickel and Ni-base alloy, (5)174

shot peening infl polarization of steel, (11)432

steel, Zn coatings infl on phosphating, (6)213

COLD WORK PREVENTION AND CONTROL

cracking of 304 in low temp acid solution, (8)323

iron effects on zirconium corrosion, (6)218

steel, Zn coatings infl on phosphating, (6)213

COLD WORK, EFFECTS

env + cold work vs SCC of copper-zinc, (5)161

etching of Cu ion implanted Al in Cl-sulfate, (4)151

COLUMBIUM

ferric sulfate sensit test modification, (12)469

hardenable steels for H₂S resist tubes, (3)83

Combustion gases, causes: surface oxide infl on gun barrel wear, (10)384

Compressive stresses, causes: shot peening infl polarization of steel, (11)432

COMPUTER CALCULATIONS

computer simulation intergranular attack, (6)247

impedance analysis of corrosion rates, (11)466

CONCENTRATION

Si,P vs cracks in 403 SS in NaCl, NaOH, (1)1

disc- inhibitors for sour gas, (7)296

Concentration cells, causes: mass transfer effects in filiform attack, (11)452

CONCENTRATION OF CHEMICALS UP TO 10%

anodic protection mild steel in nitric acid, (2)55

SCC low pressure steam turbine rotor steel, (4)120

CONCENTRATION OF CHEMICALS 10 TO 20%

disc- potential caustic conc vs SCC CrNiMoV, (9)363

potential, caustic conc vs SCC NiCrMoV steel, (2)66

CONCENTRATION OF CHEMICALS 31 TO 40%

anodic protection mild steel in nitric acid, (2)55

disc- potential caustic conc vs SCC CrNiMoV, (9)363

potential, caustic conc vs SCC NiCrMoV steel, (2)66

SCC low pressure steam turbine rotor steel, (4)120

CONCENTRATION OF CHEMICALS 61 TO 70%

anodic protection mild steel in nitric acid, (2)55

SCC of Zr and alloys in nitric acid, (5)167

Concentration of chemicals 71 to 80%: iron effects on zirconium corrosion, (6)218

Concentration of chemicals 81 to 90%: SCC of Zr and alloys in nitric acid, (5)167

Concentration of chemicals 91 to 100%: SCC of Zr and alloys in nitric acid, (5)167

Concentration of chemicals 81 to 90%: SCC of Zr and alloys in nitric acid, (5)167

Concentration of chemicals 91 to 100%: SCC of Zr and alloys in nitric acid, (5)167

Concentration of chemicals 91 to 100%: SCC of Zr and alloys in nitric acid, (5)167

Concentration of chemicals 91 to 100%: SCC of Zr and alloys in nitric acid, (5)167

Concentration of chemicals 91 to 100%: SCC of Zr and alloys in nitric acid, (5)167

Concentration of chemicals 91 to 100%: SCC of Zr and alloys in nitric acid, (5)167

Concentration of chemicals 91 to 100%: SCC of Zr and alloys in nitric acid, (5)167

Concentration of chemicals 91 to 100%: SCC of Zr and alloys in nitric acid, (5)167

Concentration of chemicals 91 to 100%: SCC of Zr and alloys in nitric acid, (5)167

Concentration of chemicals 91 to 100%: SCC of Zr and alloys in nitric acid, (5)167

Concentration of chemicals 91 to 100%: SCC of Zr and alloys in nitric acid, (5)167

Concentration of chemicals 91 to 100%: SCC of Zr and alloys in nitric acid, (5)167

Concentration of chemicals 91 to 100%: SCC of Zr and alloys in nitric acid, (5)167

Concentration of chemicals 91 to 100%: SCC of Zr and alloys in nitric acid, (5)167

Concentration of chemicals 91 to 100%: SCC of Zr and alloys in nitric acid, (5)167

Concentration of chemicals 91 to 100%: SCC of Zr and alloys in nitric acid, (5)167

Concentration of chemicals 91 to 100%: SCC of Zr and alloys in nitric acid, (5)167

Concentration of chemicals 91 to 100%: SCC of Zr and alloys in nitric acid, (5)167

mate on Cu Ni vs marine environ, (9)371

Constant load tensile tests: env + cold work vs SCC of copper-zinc, (5)161

CONTAMINATION, ENVIRONMENTAL EFFECTS

H permeability of nickel and Ni-base alloy, (5)174

steel, Zn coatings infl on phosphating, (6)213

COPPER

crevice attack on Inconel steel vs seawater, (9)354

marine atmos attack electrochem measurement, (7)291

COPPER, SALTS, CAUSES

etching of Cu ion implanted Al in Cl-sulfate, (4)151

SCC low pressure steam turbine rotor steel, (4)120

Copper, wrought, 310-385 CDA leaded bronze, low, medium, high brass, forging: env + cold work vs SCC of copper-zinc, (5)161

Copper, wrought, 701-725 CDA Cu Ni 10-30%: Na dichromate on Cu Ni vs marine environ, (9)371

Copper, wrought, 701-725 CDA Cu Ni 10-30%: Na dichromate on Cu Ni vs marine environ, (9)371

Copper, wrought, 701-725 CDA Cu Ni 10-30%: Na dichromate on Cu Ni vs marine environ, (9)371

Copper, wrought, 701-725 CDA Cu Ni 10-30%: Na dichromate on Cu Ni vs marine environ, (9)371

Copper, wrought, 701-725 CDA Cu Ni 10-30%: Na dichromate on Cu Ni vs marine environ, (9)371

Copper, wrought, 701-725 CDA Cu Ni 10-30%: Na dichromate on Cu Ni vs marine environ, (9)371

Copper, wrought, 701-725 CDA Cu Ni 10-30%: Na dichromate on Cu Ni vs marine environ, (9)371

Copper, wrought, 701-725 CDA Cu Ni 10-30%: Na dichromate on Cu Ni vs marine environ, (9)371

Copper, wrought, 701-725 CDA Cu Ni 10-30%: Na dichromate on Cu Ni vs marine environ, (9)371

Copper, wrought, 701-725 CDA Cu Ni 10-30%: Na dichromate on Cu Ni vs marine environ, (9)371

Copper, wrought, 701-725 CDA Cu Ni 10-30%: Na dichromate on Cu Ni vs marine environ, (9)371

Copper, wrought, 701-725 CDA Cu Ni 10-30%: Na dichromate on Cu Ni vs marine environ, (9)371

Copper, wrought, 701-725 CDA Cu Ni 10-30%: Na dichromate on Cu Ni vs marine environ, (9)371

Copper, wrought, 701-725 CDA Cu Ni 10-30%: Na dichromate on Cu Ni vs marine environ, (9)371

Copper, wrought, 701-725 CDA Cu Ni 10-30%: Na dichromate on Cu Ni vs marine environ, (9)371

Copper, wrought, 701-725 CDA Cu Ni 10-30%: Na dichromate on Cu Ni vs marine environ, (9)371

Copper, wrought, 701-725 CDA Cu Ni 10-30%: Na dichromate on Cu Ni vs marine environ, (9)371

Copper, wrought, 701-725 CDA Cu Ni 10-30%: Na dichromate on Cu Ni vs marine environ, (9)371

Copper, wrought, 701-725 CDA Cu Ni 10-30%: Na dichromate on Cu Ni vs marine environ, (9)371

Copper, wrought, 701-725 CDA Cu Ni 10-30%: Na dichromate on Cu Ni vs marine environ, (9)371

Copper, wrought, 701-725 CDA Cu Ni 10-30%: Na dichromate on Cu Ni vs marine environ, (9)371

Copper, wrought, 701-725 CDA Cu Ni 10-30%: Na dichromate on Cu Ni vs marine environ, (9)371

Copper, wrought, 701-725 CDA Cu Ni 10-30%: Na dichromate on Cu Ni vs marine environ, (9)371

Copper, wrought, 701-725 CDA Cu Ni 10-30%: Na dichromate on Cu Ni vs marine environ, (9)371

Copper, wrought, 701-725 CDA Cu Ni 10-30%: Na dichromate on Cu Ni vs marine environ, (9)371

Copper, wrought, 701-725 CDA Cu Ni 10-30%: Na dichromate on Cu Ni vs marine environ, (9)371

Copper, wrought, 701-725 CDA Cu Ni 10-30%: Na dichromate on Cu Ni vs marine environ, (9)371

oxide wedging during crack growth, (7)285

SCC Cr-Ni-Fe + weld metals in hi temp mat, (10)409

SCC low pressure steam turbine rotor steel, (4)120

Si,P vs cracks in 403 SS in NaCl, NaOH, (1)1

CREVICES

accel tests Cr Ni vs pitting, crevices, (3)98

alloy pitting in concentrated chlorides, (6)227

crevice attack on Inconel steel vs seawater, (9)354

crevice corrosion rates on 304, 316L, 904L, (8)305

disc- cath protection vs disbonded coatings, (9)370

intergranular attack, alloy 600 in steam, (2)46

pitting-crevice attack 12Cr steel at 80C, (12)463

SCC Cr-Ni-Fe + weld metals in hi temp mat, (10)409

SCC glassy Fe 40Ni 20B in acid waters, (3)91

sulfide stress cracking of linepipe steel, (9)364

CURRENT DENSITY, ON-SITE

TESTING

cathodic protection vs disbonded coating, (1)20

crevice corrosion rates on 304, 316L, 904L, (8)305

H permeability of nickel and Ni-base alloy, (5)174

Cyclic stresses, causes: Si,P vs cracks in 403 SS in NaCl, NaOH, (1)1

D

DATA CORRELATION, CALCULATIONS

accel tests Cr Ni vs pitting, crevices, (3)98

apparatus for erosion-corrosion tests, (9)377

DEAERATION

pitting-crevice attack 12Cr steel at 80C, (12)483

SCC sensitized 304 in chloride-sulfate, (11)425

DEFECTS, ATOMIC

etching of Cu ion implanted Al in Cl-sulfate, (4)151

ferritic steels with hydrogen vs acids, (4)115

Dehydration: mass transfer effects in filiform attack, (11)452

DELAMINATION, EFFECTS

corrosion beneath organic coatings, (5)189

steel, Zn coatings infl on phosphating, (6)213

Deposition, causes: particle activity-VII hematite on steel, (1)15

Desorption: hydrogen absorption by austenitic SS, (6)207

Diffusion, materials causes: H permeability of nickel and Ni-base alloy, (5)174

DIFFUSION, MATERIALS EFFECTS

corrosion beneath organic coatings, (5)189

H permeability of nickel and Ni-base alloy, (5)174

Disbonding, coatings: disc- cath protection vs disbonded coatings, (9)370

DISCUSSIONS

cathodic protection vs disbonded coating, (1)20

cathodic protection vs disbonded coatings, (9)370

potential caustic conc vs SCC CrNiMoV, (9)363

inhibitors for sour gas, (7)296

galvanic attack on steel in NaCl, (1)36

H absorption on C-Mn, steel vs acid NaCl, (2)74

metal reactions in acids-I iron in mine, (5)204

potential, caustic conc vs SCC NiCrMoV steel, (2)66

DISLOCATIONS, CAUSES

etching of Cu ion implanted Al in Cl-sulfate, (4)151

metallurgical effects on steel vs H₂S, (11)435

Dodecanoic acids, causes: microrial corrosion of aluminum alloys, (1)26

Ducts or pipes: hardenable steels for H₂S resistant tubes, (3)83

E

Edge effects: cathodic protection vs disbonded coating, (1)20

Electrical causes: particle activity-VII hematite on steel, (1)15

Electrical environmental accelerated lab testing: corrosion vs sine wave distortion -pt 1, (2)61

Electrical environmental effects: corrosion beneath organic coatings, (5)189

Electrical insulation: corrosion beneath organic coatings, (5)189

Electrode phenomena: finite element analysis of marine structure, (5)181

ELECTRODES, TESTING

Ag-AgCl ref electrode for hi temp-pressure, (5)202

steel vs NaCl contaminated concrete -Part 1, (8)299

ELECTRON MICROSCOPE,

TESTING

crevice attack on Inconel-steel vs seawater, (9)354

etching of Cu ion implanted Al in Cl-sulfate, (4)151

intergranular attack alloy 600 in steam, (2)46

radiographic study H absorb C, alloy steel, (7)258

SCC Cr-Ni-Fe + weld metals in hi temp mat, (10)409

sensitization austenitic SS-II commercial purity, (4)132

Electronic instruments: anodic films on W in phosphate solutions, (7)266

EMBRITTLEMENT

cracking of 304 in low temp acid solution, (8)323

particle activity-VII hematite on steel, (1)15

Epoxies, thin film coatings: reactions under a coating blister on steel, (3)108

ERRATA

hematite in boiling water in boiler water reactor, (3)113

SCC Cr-Ni-Fe + weld metals in hi temp mat, (12)507

SCC Cr-Ni-Fe + weld metals in hi temp mat, (10)409

F

Fabrication: metal sampling for corrosion analysis, (7)294

FATIGUE STRESSES, CAUSES

oxide wedging during crack growth, (7)285

Si,P vs cracks in 403 SS in NaCl, NaOH, (1)1

FERRIC CHLORIDE, CAUSES

alloy pitting in concentrated chlorides, (6)227

SCC glassy Fe 40Ni 20B in acid waters, (3)91

Filiform, coatings: mass transfer effects in filiform attack, (11)452

FILMING, MATERIALS

anodic films on W in phosphate solutions, (7)266

anodic oxidation of Fe in aqueous solution, (6)241

etching of Cu ion implanted Al in Cl-sulfate, (4)151

Na dichromate on CuNi vs marine environment, (9)371

O₂ + nitrate anions vs 304 in 290C water, (8)313

SCC Cr-Ni-Fe vs low temp sulfur solution, (10)391

SCC Cr-Ni-Fe vs 20-80C H₃BO₃ + Na₂SO₄, (10)386

Films on materials, causes: phosphate precipitation mechanisms, (3)77

FRACURE

H vs delayed cracking of 4340 steel, (2)71

oxide wedging during crack growth, (7)285

Fumes, causes: corrosion beneath organic coatings, (5)189

FUNDAMENTALS

corrosion beneath organic coatings, (5)189

H permeability of nickel and Ni-base alloy, (5)174

G

GALVANIC CELLS, CAUSES

crevice attack on Inconel-steel vs seawater, (9)354

disc- galvanic attack on steel in NaCl, (1)36

marine atmosphere attack on electrochem measurement, (7)291

Na dichromate on CuNi vs marine environment, (9)371

Galvanic systems, cathodic protection: finite element analysis of marine structures, (5)181

Galvanic, electrochemical causes: finite element analysis of marine structures, (5)181

Galvanic, instrumentation, testing: marine atmosphere attack on electrochem measurement, (7)291

GALVANOSTATS, TESTING

galvanostatic polarization resistance measurements, (11)444

polar resistance measurements, underground rates, (12)475

Gases or vapors, chemical or electrochemical lab testing: env + cold work vs SCC of copper-zinc, (5)161

Geographical: marine atmosphere attack, electrochem measurement, (7)291

Geometry, pitting: pitting-crevice attack 12Cr steel at 80C, (12)483

Glassy, homogeneous, Cu alloys: structure influence on glassy Cu-Zr alloys, (7)271

GRAIN, MATERIALS CAUSES

AISI 304, alloy 600 vs aqueous S dioxide, (7)279

cracking of 304 in low temp acid solution, (8)323

env + cold work vs SCC of copper-zinc, (5)161

H permeability of nickel and Ni-base alloy, (5)174

heat treat vs anodic polar of Cr steel, (12)502

intergranular attack, alloy 600 in steam, (2)46

iron effects on zirconium corrosion, (6)218

metallurgical effects on steel vs H₂S, (11)435

O₂ + nitrate anions vs 304 in 290C water, (8)313

SCC glassy Fe 40Ni 20B in acid waters, (3)91

sensitization austenitic SS-II commercial purity, (4)132

structure influence on glassy Cu-Zr alloys, (7)271

GRAPHIC, RECORDING DATA,

LAB TESTING

arsenic influence on passivation of titanium, (1)13

computer simulation intergranular attack, (6)247

Cr oxide analysis re Pourbaix diagram, (12)488

O₂ + nitrate anions vs 304 in 290C water, (8)313

H

Half-cells, testing: Ag-AgCl ref electrode for hi temp, pressure, (5)202

HARDENING

hardenable steels for H₂S resist tubes, (3)83

heat treat vs anodic polar of Cr steel, (12)502

sulfide stress cracking of linepipe steel, (9)364

Hardness, lab testing: hardenable steels for H₂S resist tubes, (3)83

HASTELLOY C-276

alloy pitting in concentrated chlorides, (6)227

anodic dissolution of Ni-base superalloy, (4)144

HASTELLOY G

accel tests, CrNi vs pitting, crevices, (3)98

alloy pitting in concentrated chlorides, (6)227

HEAT AFFECTED ZONE, CAUSES:

SCC Cr-Ni-Fe + weld metals in hi temp mat, (10)409

HEAT EXCHANGERS

crevice attack on Inconel-steel vs seawater, (9)354

intergranular attack alloy 600 in steam, (2)46

Na dichromate on CuNi vs marine environment, (9)371

SCC Cr-Ni-Fe vs low temp sulfur solution, (10)391

Heat flux, causes: Ni vs NaOH under heat transfer conditions, (10)399

Heating effects: sensitization austenitic SS-II commercial purity, (4)132

HEATING PREVENTION AND CONTROL

AISI 304, alloy 600 vs aqueous S dioxide, (7)279

computer simulation intergranular attack, (6)247

cracking of 304 in low temp acid solution, (8)323

ferric sulfate sensit test modification, (12)469

ferritic steels with hydrogen vs acids, (4)115

H permeability of nickel and Ni-base alloy, (5)174

hardenable steels for H₂S resist tubes, (3)83

heat treat vs anodic polar of Cr steel, (12)502

intergranular attack, alloy 600 in steam, (2)46

iron effects on zirconium corrosion, (6)218

metallurgical effects on steel vs H₂S, (11)435

SCC Cr-Ni-Fe + weld metals in hi temp mat, (10)409

SCC sensitized 304 in chloride-sulfate, (11)425

structure influences on glassy Cu-Zr alloys, (7)271

HIGH PURITY AQUEOUS

ENVIRONMENTS, CAUSES

pitting-crevice attack 12Cr steel at 80C, (12)483

SCC Cr-Ni-Fe + weld metals in hi temp mat, (10)409

SCC low pressure steam turbine rotor steel, (4)120

SCC sensitized 304 in chloride-sulfate, (11)425

steel vs NaCl contaminated concrete -part 1, (8)299

O₂ + nitrate anions vs 304 in 290C water, (8)313

HIGH TEMPERATURE

Ag-AgCl ref electrode for hi temp-pressure, (5)202

crevice attack on Inconel-steel vs seawater, (9)354

iron effects on zirconium corrosion, (6)218

surface oxide infl on gun barrel wear, (10)384

HUMID, ATMOSPHERIC CAUSES

marine atmosphere attack, electrochem measurement, (7)291

mass transfer effects in filiform attack, (11)452

HYDROCHLORIC ACIDS, CAUSES

accel tests CrNi vs pitting, crevices, (3)98

anodic films on W in phosphate solutions, (7)266

ferritic steels with hydrogen vs acids, (4)115

metal reactions in acids-I iron in mine, (5)204

passivation of austenitic SS by, (12)491

SCC glassy Fe 40Ni 20B in acid waters, (3)91

HYDROGEN EMBRITTLEMENT

Cr oxide analysis re Pourbaix diagram, (12)488

H vs delayed cracking of 4340 steel, (2)71

hydrogen absorption by austenitic SS, (6)207

loading mode effects on SCC tests, (11)449

metallurgical effects on steel vs H₂S, (11)435

radiographic study H absorb C, alloy steel, (7)258

SCC glassy Fe 40Ni 20B in acid waters, (3)91
sulfide stress cracking of linepipe steel, (9)364

HYDROGEN, CAUSES

cathodic protection vs disbonded coating, (1)20
disc- cath. protection vs disbonded coatings, (9)370
ferritic steels with hydrogen vs acids, (4)115
H absorpt on C-Mn steel vs acid NaCl, (2)74
H permeability of nickel and Ni-base alloy, (5)174
hydrogen absorption by austenitic SS, (6)207
metal sampling for corrosion analysis, (7)294
radiographic study H absorb C, alloy steel, (7)258
sulfide stress cracking of linepipe steel, (9)364

HYDROGEN, SULFIDE, CAUSES

Ag-AgCl ref electrode for hi temp-pressure, (5)202
disc- inhibitors for sour gas, (7)296
hardenable steels for H₂S resist tubes, (3)83
metallurgical effects on steel vs H₂S, (1)435
pH in aqueous CO₂ solution under hi pressure, (2)39
sulfidation of 25 Cr-Fe in 50-400C H₂S, (6)236
sulfide stress cracking of linepipe steel, (9)364

Hydrogen, tritium, causes: radiographic study H absorb C, alloy steel, (7)258

I

Ice, water, general: carbon steel reactions in permafrost, (9)346

IMPEDANCE, ELECTRICAL EFFECTS

impedance analysis of corrosion rates, (1)466
reactions under a coating blister on steel, (3)108

IMMERSION, LIQUID, CHEMICAL OR ELECTROCHEMICAL LAB TESTING

accel tests CrNi vs pitting, crevices, (3)98
alloy pitting in concentrated chlorides, (6)227
SCC Cr-Ni-Fe vs low temp sulfur solution, (10)391

Inclusions, causes: radiographic study H absorb C, alloy steel, (7)258
Incoloy 825: accel tests CrNi vs pitting, crevices, (3)98

INCOLOYS 800, 800H, 801

computer simulation intergranular attack, (6)247
H permeability of nickel and Ni-base alloy, (5)174

INHIBITORS

arsenic infl on passivation of titanium, (1)13
corrosion beneath organic coatings, (5)189
inhib chemical cleaning solution for carbon steel, (12)496
Na dichromate on CuNi vs marine environment, (9)371
passivation of austenitic SS by, (12)491
phosphate precipitation mechanisms, (3)77
SCC Cr-Ni-Fe vs 20-80C H₃BO₃ + Na₂SO₄, (10)386
Si₃N₄ vs cracks in 403 SS in NaCl, NaOH, (1)1
spectroscopic analysis, inhibitors on metals, (9)357
surfactants & inhibitors for Al, hi strength steel, (7)253

Inorganic inhibitors: surfactants & inhibitors for Al, hi strength steel, (7)253

INSTRUMENTATION, TESTING

Ag-AgCl ref electrode for hi temp-pressure, (5)202
anodic dissolution of Ni-base superalloy, (4)144
apparatus for erosion-corrosion tests, (9)377
carbon steel reactions in permafrost, (9)346
corrosion vs sine wave distortion -pt 1, (2)61
crevice attack on Inconel-steel vs seawater, (9)354
crevice corrosion rates on 304, 316L, 904L, (8)305
disc- inhibitors for sour gas, (7)296
env + cold work vs SCC of copper-zinc, (5)161
etching of Cu ion implanted Al in Cl-sulfate, (4)151
Faradaic rectification corrosion monitor, (7)293
galvanostatic polarization resist measurement, (11)444
hardenable steels for H₂S resist tubes, (3)83
metal sampling for corrosion analysis, (7)294
Na dichromate on CuNi vs marine environment, (9)371
O₂ + nitrate anions vs 304 in 290C water, (8)313
particle activity-VII hematite on steel, (1)15
pH in aqueous CO₂ solution under hi pressure, (2)39
pitting-crevice attack 12Cr steel at 80C, (12)483
radiographic study H absorb C, alloy steel, (7)258
reactions under a coating blister on steel, (3)108
SCC Cr-Ni-Fe + weld metals in hi temp mat, (10)409
SCC glassy Fe 40Ni 20B in acid waters, (3)91
SCC of Zr and alloys in nitric acid, (5)167

SCC sensitized 304 in chloride-sulfate, (11)425
Si₃N₄ vs cracks in 403 SS in NaCl, NaOH, (1)1
spectroscopic analysis inhibitors on metals, (9)357
sulfide stress cracking of linepipe steel, (9)364

INTERFACE EFFECTS

cathodic protection vs disbonded coating, (1)20
corrosion beneath organic coatings, (5)189
etching of Cu ion implanted Al in Cl-sulfate, (4)151
Na dichromate on Cu Ni vs marine environment, (9)371
SCC glassy Fe 40Ni 20B in acid waters, (3)91
shot peening infl polarization of steel, (11)432
spectroscopic analysis inhibitors on metals, (9)357
structure infl on glassy Cu-Zr alloys, (7)271

INTERFACE, CAUSES

carbon steel reactions in permafrost, (9)346
H vs delayed cracking of 4340 steel, (2)71
heat treat vs anodic polar of Cr steel, (12)502
spectroscopic analysis inhibitors on metals, (9)357
steel, Zn coatings infl on phosphating, (6)213

Intergranular cracking: O₂ + nitrate anions vs 304 in 290C water, (8)313

INTERGRANULAR, LOCALIZED EFFECTS

AlSi 304, alloy 600 vs aqueous S dioxide, (7)279
computer simulation intergranular attack, (6)247
H vs delayed cracking of 4340 steel, (2)71
intergranular attack alloy 600 in steam, (2)46
iron effects on zirconium corrosion, (6)218
SCC Cr-Ni-Fe + weld metals in hi temp mat, (10)409

Internal stresses, causes: hydrogen absorption by austenitic SS, (6)207

ION, EFFECTS

carbon steel reactions in permafrost, (9)346
corrosion beneath organic coatings, (5)189
Cr oxide analysis re Pourbaix diagram, (12)488
etching of Cu ion implanted Al in Cl-sulfate, (4)151
SCC Al-Cr-Cu-Fe-Mg-Mn-Si-Ti-Zn vs sodium, (10)379

IONIC CAUSES

finite element analysis of marine structure, (5)181
microrial corrosion of aluminum alloys, (1)26
 O_2 + nitrate anions vs 304 in 290C water, (8)313

IRON MATERIALS OF CONSTRUCTION

anodic oxidation of Fe in aqueous solution, (6)241
ferritic steels with hydrogen vs acids, (4)115
iron effects on zirconium corrosion, (6)218
particle activity-VII hematite on steel, (1)15

L

LABORATORY TESTING

AlSi 304, alloy 600 vs aqueous S dioxide, (7)279
alloy pitting in concentrated chlorides, (6)227
anodic polar sensitized SS in polythionic, (8)330
anodic protection mild steel in nitric acid, (2)55
arsenic infl on passivation of titanium, (1)13
cracking of 304 in low temp acid solution, (8)323
crevice attack on Inconel-steel vs seawater, (9)354
disc-inhibitors for sour gas, (7)296
finite element analysis of marine structures, (5)181
hardenable steels for H_2S resist tubes, (3)83
heat treat vs anodic polar of Cr steel, (12)502
hydrogen absorption by austenitic SS, (6)207
intergranular attack alloy 600 in steam, (2)46
loading mode effects on SCC tests, (11)449
microrial corrosion of aluminum alloys, (1)26
particle activity-VII hematite on steel, (1)15
pH in aqueous CO_2 solution under hi pressure, (2)39
radiographic study H absorb C, alloy steel, (7)258
reactions under a coating blister on steel, (3)108
SCC Al-Cr-Cu-Fe-Mg-Mn-Si-Ti-Zn vs sodium, (10)379
SCC glassy Fe 40Ni 20B in acid waters, (3)91
SCC low pressure steam turbine rotor steel, (4)120
SCC of sensitized 304 SS in polythionic, (8)333
steel vs NaCl contaminated concrete -part 1, (8)299
structure infl on glassy Cu-Zr alloys, (7)271
sulfide stress cracking of linepipe steel, (9)364
surfactants & inhibitors for Al, hi strength steel, (7)253

Liquid petroleum energy sources: microrial corrosion of aluminum alloys, (1)26
Lithium hydroxide, causes: SCC Cr-Ni-Fe vs 20-80C H_3BO_3 + Na25203, (10)386
Localized materials effects: galvanostatic polarization resist measurement, (11)444
Low temperatures: cracking of 304 in low temp acid solution, (8)323

M

Manganese: alloy pitting in concentrated chlorides, (6)227
Marine atmospheric, causes: marine atmosphere attack electrochem measurement, (7)291
Mass transfer: mass transfer effects in filiform attack, (11)452

METAL ARC WELDING

iron effects on zirconium corrosion, (6)218
SCC Cr-Ni-Fe + weld metals in hi temp mat, (10)409
SCC of Zr and alloys in nitric acid, (5)167

Metal pipes: intergranular attack, alloy 600 in steam, (2)46
Microbiological accelerated lab testing: microrial corrosion of aluminum alloys, (1)26
Microorganisms, causes: microrial corrosion of aluminum alloys, (1)26
Molybdates, bases and salts, causes: surfactants & inhibitors for Al, hi strength steel, (7)253

MOLYBDENUM

accel tests, CrNi vs pitting, crevices, (3)98
alloy pitting in concentrated chlorides, (6)227
hardenable steels for H_2S resist tubes, (3)83
sensitization austenitic SS-II commercial purity, (4)132

N

NACE Standards: sulfide stress cracking of linepipe steel, (9)364
Natural gas: disc-inhibitors for sour gas, (7)296
Natural gases, causes: hardenable steels for H_2S resist tubes, (3)83

NICKEL

Cr + N ions vs Cr-Ni, Ni Pt 250C water, (10)406
Ni vs NaOH under heat transfer condition, (10)399

Nickel alloys, other: accel tests Cr Ni vs pitting, crevices, (3)98
Nickel 200-270: H permeability of nickel and Ni-base alloy, (5)174

NICKEL-CHROMIUM-IRON ALLOYS

alloy pitting in concentrated chlorides, (6)227
disc-potential, caustic conc vs SCC CrNiMoV, (9)363

H permeability of nickel and Ni-base alloy, (5)174
potential, caustic conc vs SCC NiCrMoV steel, (2)66

NITRATES, BASES AND SALTS, CAUSES

microrial corrosion of aluminum alloys, (1)26
particle activity-VII hematite on steel, (1)15
SCC Al-Cr-Cu-Fe-Mg-Mn-Si-Ti-Zn vs sodium, (10)379
surfactants & inhibitors for Al, hi strength steel, (7)253
 O_2 + nitrate anions vs 304 in 290C water, (8)313

NITRIC ACIDS, CAUSES

anodic protection mild steel in nitric acid, (2)55
benzoic acid inhibitors for Ni in HNO_3 , (12)481
ferritic steels with hydrogen vs acids, (4)115
SCC of Zr and alloys in nitric acid, (5)167

NITRITES, BASES AND SALTS, CAUSES

radiographic study H absorb C, alloy steel, (7)258
surfactants & inhibitors for Al, hi strength steel, (7)253

NITROGEN COMPOUNDS, INHIBITORS

benzoic acid inhibitors for Ni in HNO_3 , (12)481
Cr + N ions vs Cr-Ni, Ni Pt 250C water, (10)406
disc-inhibitors for sour gas, (7)296
Na dichromate on CuNi vs marine environment, (9)371
spectroscopic analysis, inhibitors on metals, (9)357

NITROGEN, CAUSES

accel tests CrNi vs pitting, crevices, (3)98
alloy pitting in concentrated chlorides, (6)227
sensitization austenitic SS-II commercial purity, (4)132

Nitrogen, organic inhibitors: inhib chemical cleaning solution for carbon steel, (12)496

Nuclear reactors: crevice attack on Inconel-steel vs seawater, (9)354

O

Offshore oil petroleum - wells: finite element analysis of marine structures, (5)181

Oils, petroleum - wells production: hardenable steels for H_2S resist tubes, (3)83

ON-SITE OR PILOT PLANT TESTING

accel tests CrNi vs pitting, crevices, (3)98

intergranular attack alloy 600 in steam, (2)46

Optical nondestructive testing: H vs delayed cracking of 4340 steel, (2)71
Ordnance industries: surface oxide infl on gun barrel wear, (10)384

ORGANIC COATINGS

cathodic protection vs disbonded coating, (1)20
corrosion beneath organic coatings, (5)189
finite element analysis of marine structure, (5)181
mass transfer effects in filiform attack, (11)452

Organic inhibitors: inhib chemical cleaning solution for carbon steel, (12)496
Organo-metallics: polar resistance measurements, underground rates, (12)475
Orientation, grain, causes: SCC glassy Fe 40Ni 20B in acid waters, (3)91
Osmosis, effects: mass transfer effects in filiform attack, (11)452

OXIDATION

anodic oxidation of Fe in aqueous solution, (6)241
arsenic infl on passivation of titanium, (1)13
cathodic protection vs disbonded coating, (1)20
crevice attack on Inconel-steel vs seawater, (9)354
inhib chemical cleaning solution for carbon steel, (2)496
sulfidation of 25 Cr-Fe in 50-400C H₂S, (6)236

OXIDES, BASES AND SALTS CAUSES

anodic films on W in phosphate solutions, (7)266
cathodic protection vs disbonded coating, (1)20
Cr oxide analysis re Pourbaix diagram, (12)488
crevice attack on Inconel-steel vs seawater, (9)354
microrial corrosion of aluminum alloys, (1)26
Ni vs NaOH under heat transfer condition, (10)399
oxide wedging during crack growth, (7)285
particle activity-VII hematite on steel, (1)15
surface oxide infl on gun barrel wear, (10)384

OXYGEN, CAUSES

Cr + N ions vs Cr-Ni Ni Pt 250C water, (10)406
disc- galvanic attack on steel in NaCl, (1)36
heat treat vs anodic polar of Cr steel, (12)502
mass transfer effects in filiform attack, (11)452
oxide wedging during crack growth, (7)285

O₂ + nitrate anions vs 304 in 290C water, (8)313

pitting-crevice attack 12Cr steel at 80C, (12)483

SCC Cr-Ni-Fe + weld metals in hi temp mat, (10)409

SCC Cr-Ni-Fe vs low temp sulfur solution, (10)391

SCC Cr-Ni-Fe vs 20-80C H₃BO₃ + Na₂SO₄, (10)386

SCC of sensitized 304 SS in polythionic, (8)333

SCC of Zr and alloys in nitric acid, (5)167

P

PASSIVATION

anodic oxidation of Fe in aqueous solution, (6)241
arsenic infl on passivation of titanium, (1)13
Cr oxide analysis re Pourbaix diagram, (12)488
passivation of austenitic SS, (12)491
SCC sensitized 304 in chloride-sulfate, (11)425
shot peening infl polarization of steel, (11)432
surfactants & inhibitors for Al, hi strength steel, (7)253
O₂ + nitrate anions vs 304 in 290C water, (8)313
Passivation, causes: SCC of Zr and alloys in nitric acid, (5)167
Peening, surface preparation: shot peening infl polarization of steel, (11)432

PERFORATION, COATINGS

cathodic protection vs disbonded coating, (1)20
finite element analysis of marine structures, (5)181

PERMEATION, LAB TESTING

disc- inhibitors for sour gas, (7)296
H permeability of nickel and Ni-base alloy, (5)174
hydrogen absorption by austenitic SS, (6)207
mass transfer effects in filiform attack, (11)452
radiographic study H absorb C, alloy steel, (7)258

PERMEATION, MATERIALS

corrosion beneath organic coatings, (5)189
radiographic study H absorb C, alloy steel, (7)258
steel, Zn coatings infl on phosphating, (6)213
sulfide stress cracking of linepipe steel, (9)364

Permeation, materials, causes: H permeability of nickel and Ni-base alloy, (5)174

pH CHANGES, EFFECTS

anodic dissolution of Ni-base superalloy, (4)144

anodic films on W in phosphate solutions, (7)266

particle activity-VII hematite on steel, (1)15

mass transfer effects in filiform attack, (11)452

microrial corrosion of aluminum alloys, (1)26

pH in aqueous CO₂ solution under hi pressure, (2)39

spectroscopic analysis inhibitors on metals, (9)357

pH control: Cr + N ions vs Cr-Ni in Pt 250C water, (10)406

pH - less than 6: SCC glassy Fe 40Ni 20B in acid waters, (3)91

pH METERS, TESTING

anodic oxidation of Fe in aqueous solution, (6)241
reactions under a coating blister on steel, (3)108
SCC Al-Cr-Cu-Fe-Mg-Mn-Si-Ti-Zn vs sodium, (10)379
spectroscopic analysis inhibitors on metals, (9)357

PHASE, METAL STRUCTURE, MATERIALS, CAUSES

cracking of 304 in low temp acid solution, (8)323
hydrogen absorption by austenitic SS, (6)207
metallurgical effect on steel vs H₂S, (11)435

Phosphate conversion coatings: steel, Zn coatings infl on phosphating, (6)213

PHOSPHATES, BASES AND SALTS, CAUSES

anodic films on W in phosphate solutions, (7)266
microrial corrosion of aluminum alloys, (1)26
phosphate precipitation mechanisms, (3)77

Phosphate inhibitors: Si, P vs cracks in 403 SS in NaCl, NaOH, (1)1

PHOSPHORIC ACIDS, CAUSES

metal reactions in acids-I iron in mine, (5)204
passivation of austenitic SS by, (12)491

PHOSPHORUS, CAUSES

H permeability of nickel and Ni-base alloy, (5)174
sensitization austenitic SS-II commercial purity, (4)132

Photographic, recording of data, lab testing: radiographic study H absorb C, alloy steel, (7)258

PHOTOGRAPHIC, TESTING

iron effects on zirconium corrosion, (6)218
reactions under a coating blister on steel, (3)108

PIPELINES TRANSPORTATION

carbon steel reactions in permafrost, (9)346
sulfide stress cracking of linepipe steel, (9)364

PITTING

accel tests CrNi vs pitting, crevices, (3)98
alloy pitting in concentrated chlorides, (6)227
etching of Cu ion implanted Al in Cl-sulfate, (4)151
microrial corrosion of aluminum alloys, (1)26
passivation of austenitic SS by, (12)491
pitting-crevice attack 12Cr steel at 80C, (12)483
SCC Cr-Ni-Fe vs low temp sulfur solution, (10)391
SCC glassy Fe 40Ni 20B in acid waters, (3)91
surfactants & inhibitors for Al, hi strength steel, (7)253

Pitting, initiation: H vs delayed cracking of 4340 steel, (2)71
Platinum: Cr + N ions vs Cr-Ni Pt 250C water, (10)406

POLARIZATION RATE METERS

alloy pitting in concentrated chlorides, (6)227
anodic polar sensitized SS in polythionic, (8)330
anodic protection mild steel in nitric acid, (2)55
apparatus for erosion-corrosion tests, (9)377
benzoic acid inhibitors for N in HNO₃, (12)481
carbon steel reactions in permafrost, (9)346
corrosion vs sine wave distortion -pt 1, (2)61
cracking of 304 in low temp acid solution, (8)323
crevice corrosion rates on 304, 316L, 904L, (8)305
current and Tafel slope evaluation m.c.d.e, (1)33
ferric sulfate sensit test modification, (12)469
finite element analysis of marine structure, (5)181
galvanostatic polarization resist measurements, (11)444
H permeability of nickel and Ni-base alloy, (5)174
heat treat vs anodic polar of Cr steel, (12)502
impedance analysis of corrosion rates, (11)466
Na dichromate on CuNi vs marine environment, (9)371
Ni vs NaOH under heat transfer condition, (10)399
passivation of austenitic SS by, (12)491
polar resistance measurement, underground rates, (12)475
SCC low pressure steam turbine rotor steel, (4)120

SCC of sensitized 304 SS in polythionic, (8)333
SCC of Zr and alloys in nitric acid, (5)167
shot peening infl polarization of steel, (11)432
steel vs NaCl contaminated concrete -part 1, (8)299
structure infl on glassy Cu-Zr alloys, (7)271
surfactants & inhibitors for Al, hi strength steel, (7)253

Polarization, causes: anodic dissolution of Ni-base superalloy, (4)144
Polluted aqueous environments, causes: marine atmosphere attack, electrochem measurement, (7)291

POTENTIALS, LAB TESTING

accel tests Cr Ni vs pitting, crevices, (3)98
AISI 304, alloy 600 vs aqueous S dioxide, (7)279
carbon steel reactions in permafrost, (9)346
cathodic protection vs disbonded coating, (1)20
Cr + N ions vs Cr-Ni, Ni Pt 250C water, (10)406
current and Tafel slope evaluation mode, (1)33
disc- cath protection vs disbonded coatings, (9)370
disc- potential caustic conc vs SCC CrNiMoV, (9)363
etching of Cu ion implanted Al in Cl-sulfate, (4)151
microrial corrosion of aluminum alloys, (1)26
potential, caustic conc vs SCC NiCrMoV steel, (2)66
reactions under a coating blister on steel, (3)108
SCC of sensitized 304 SS in polythionic, (8)333

POTENTIOMETERS

anodic oxidation of Fe in aqueous solution, (6)241
anodic polar sensitized SS in polythionic, (8)330
anodic protection, mild steel in nitric acid, (2)55
carbon steel reactions in permafrost, (9)346
cathodic protection vs disbonded coating, (1)20
corrosion vs sine wave distortion -pt 1, (2)61
Cr + N ions vs Cr-Ni Ni Pt 250C water, (10)406
Faradaic rectification corrosion monitor, (7)293
galvanostatic polarization resist measurements, (11)444
heat treat vs anodic polar of Cr steel, (12)502
mass transfer effects in filiform attack, (11)452
Na dichromate on Cu Ni vs marine environment, (9)371

passivation of austenitic SS by, (12)491
pitting-crevice attack 12Cr steel at 80C, (12)483
SCC of sensitized 304 SS in polythionic, (8)333
SCC sensitized 304 in chloride-sulfate, (11)425
Si,P vs cracks in 403 SS in NaCl, NaOH, (1)1

Precipitation, non-rain, effects: phosphate precipitation mechanisms, (3)77
Pressure, environmental, accel lab testing: sulfidation of 25 Cr-Fe in 50-400C H₂S, (6)236
Pressure, pounds/in.² 0-100 MPa 0.6895: sulfidation of 25 Cr-Fe in 50-400C H₂S, (6)236
Pressure, pounds/in.² 100-500 MPa 0.6895-3.45: ferritic steels with hydrogen vs acids, (4)115
Pressure, pounds/in.² 1000-2000 MPa 6.9-13.8: oxide wedging during crack growth, (7)285
Pressure, pounds/in.² 2000-3000 MPa 13.8-27.6: oxide wedging during crack growth, (7)285

PRESSURE, POUNDS/IN.² 3000 AND OVER MPa 27.6 AND OVER
oxide wedging during crack growth, (7)285
pH in aqueous CO₂ solution under hi pressure, (2)39

Pressure, pounds/in.² 500-1000 MPa 3.45-6.9: Ag-AgCl ref electrode for hi temp-pressure, (5)202

R

Radiation, atomic, accel lab testing: radiographic study H absorb C, alloy, (7)258

RATE OR ZONE CALCULATIONS

alloy pitting in concentrated chlorides, (6)227
anodic dissolution of Ni-base superalloy, (4)144
anodic films on W in phosphate solutions, (7)266
anodic prot mild steel in nitric acid, (2)55
apparatus for erosion-corrosion tests, (9)377
benzoic acid inhibitors for Ni in HNO₃, (12)481
carbon steel reactions in permafrost, (9)346
corrosion beneath organic coatings, (5)189
crevice corrosion rates on 304, 316L, 904L, (8)305
etching of Cu ion implanted Al in Cl-sulfate, (4)151
ferritic steels with hydrogen vs acids, (4)115
impedance analysis of corrosion rates, (11)466
iron effects on zirconium corrosion, (6)218

metal reactions in acids-I iron in mine, (5)204
Ni vs NaOH under heat transfer condition, (10)399
phosphate precipitation mechanisms, (3)77
SCC Al-Cr-Cu-Fe-Mg-Mn-Si-Ti-Zn vs sodium, (10)379
SCC Cr-Ni-Fe + weld metals in hi temp mat, (10)409

Rate, pitting: SCC Cr-Ni-Fe vs low temp sulfur solution, (10)391
Residual stresses, causes: oxide wedging during crack growth, (7)285
Resistance electrical, nondestructive testing: finite element analysis of marine structures, (5)181
Resistance, electrical, causes: corrosion beneath organic coatings, (5)189
Resistivity, electrical, causes: carbon steel reactions in permafrost, (9)346

S

SALT, AQUEOUS, CAUSES
carbon steel reactions in permafrost, (9)346
steel vs NaCl contaminated concrete -part 1, (8)299
surfactants & inhibitors for Al, hi strength steel, (7)253

Samples, methods of taking: metal sampling for corrosion analysis, (7)294

SEA, AQUEOUS, CAUSES
crevice attack on Inconel-steel vs seawater, (9)354
finite element analysis of marine structures, (5)181
Na dichromate on Cu Ni vs marine environment, (9)371
sulfide stress cracking of linepipe steel, (9)364

SEGREGATION, GRAIN, CAUSES
AISI 304, alloy 600 vs aqueous S dioxide, (7)279
radiographic study H absorb C, alloy steel, (7)258
SCC Cr-Ni-Fe + weld metals in hi temp mat, (10)409
SCC Cr-Ni-Fe vs low temp sulfur solution, (10)391
sensitization austenitic SS-II commercial purity, (4)132

SENSITIZATION
anodic polar sensitized SS in polythionic, (8)330
ferric sulfate sensit test modification, (12)469
SCC sensitized 304 in chloride-sulfate, (11)425

Silicate inhibitors: Si,P vs cracks in 403 SS in NaCl, NaOH, (1)1

Silicon: H permeability of nickel and Ni-base alloy, (5)174
Sludge, causes: intergranular attack alloy 600 in steam, (2)46

SODIUM CHLORIDE, CAUSES
accel tests CrNi vs pitting, crevices, (3)98
AISI 304, alloy 600 vs aqueous S dioxide, (7)279
anodic dissolution of Ni-base superalloy, (4)144
corrosion beneath organic coatings, (5)189
etching of Cu ion implanted Al in Cl-sulfate, (4)151
marine atmosphere attack, electrochem measurement, (7)291
passivation of austenitic SS by, (12)491
pH in aqueous CO₂ solution under hi pressure, (2)39
SCC low pressure steam turbine rotor steel, (4)120
Si,P vs cracks in 403 SS in NaCl, NaOH, (1)1
steel vs NaCl contaminated concrete -part 1, (8)299

SODIUM HYDROXIDE, CAUSES
disc-potential caustic conc vs SCC CrNiMoV, (9)363
intergranular attack alloy 600 in steam, (2)46
Ni vs NaOH under heat transfer condition, (10)399
potential, caustic conc vs SCC NiCrMoV steel, (2)66
SCC low pressure steam turbine rotor steel, (4)120

SODIUM, CAUSES
cathodic protection vs disbonded coating, (1)20
etching of Cu ion implanted Al in Cl-sulfate, (4)151
H permeability of nickel and Ni-base alloy, (5)174
intergranular attack alloy 600 in steam, (2)46
Na dichromate on CuNi vs marine environment, (9)371
Ni vs NaOH under heat transfer condition, (10)399
particle activity-VII hematite on steel, (1)15
radiographic study H absorb C, alloy steel, (7)258
SCC Al-Cr-Cu-Fe-Mg-Mn-Si-Ti-Zn vs sodium, (10)379
SCC Cr-Ni-Fe vs 20-80C H₃BO₃ + Na₂SO₄, (10)386
SCC low pressure steam turbine rotor steel, (4)120

SOILS, CAUSES
carbon steel reactions in permafrost, (9)346
polar resistance measurement underground rates, (12)475

SPECTROMETERS
anodic dissolution of Ni-base superalloy, (4)144
corrosion beneath organic coatings, (5)189
crevice attack on Inconel-steel vs seawater, (9)354

iron effects on zirconium corrosion, (6)218
Na dichromate on CuNi vs marine environment, (9)371
passivation of austenitic SS by, (12)491
sensitization austenitic SS-II commercial purity, (4)132
spectroscopic analysis inhibitors on metals, (9)357
steel, Zn coatings infl on phosphating, (6)213

Statistics: SCC Al-Cr-Cu-Fe-Mg-Mn-Si-Ti-Zn vs sodium, (10)379

STEAM, CAUSES
crevice attack on Inconel-steel vs seawater, (9)354
intergranular attack alloy 600 in steam, (2)46
pitting-crevice attack 12Cr steel at 80C, (12)483
SCC low pressure steam turbine rotor steel, (4)120

STEAM, ROTARY, EXTERNAL COMBUSTION PRIME MOVERS
oxide wedging during crack growth, (7)285
pitting-crevice attack 12Cr steel at 80C, (12)483
SCC low pressure steam turbine rotor steel, (4)120

Steel, reinforced, not prestressed hydraulic concrete: steel vs NaCl contaminated concrete -part 1, (8)299

STEELS, CARBON WROUGHT + Mo
H vs delayed cracking of 4340 steel, (2)71
hardenable steels for H₂S resist tubes, (3)83

STEELS, CARBON WROUGHT ALLOYED
carbon steel reactions in permafrost, (9)346
ferritic steels with hydrogen vs acids, (4)115

Steels, carbon, wrought, hi strength: surfactants & inhibitors for Al, hi strength steel, (7)253

STEELS, CHROMIUM FERRITIC
crevice corrosion rates on 304, 316L, 904L, (8)305
ferric sulfate sensit test modification, (12)469

Steels, chromium 2.25-6%, mat const: metallurgical effects on steel vs H₂S, (1)435

STEELS, CHROMIUM-NICKEL, AUST., 304, 304L
AISI 304, alloy 600 vs aqueous S dioxide, (7)279
anodic polar sensitized SS in polythionic, (8)330
Cr + N ions vs Cr-Ni Ni Pt 250C water, (10)406

cracking of 304 in low temp acid solution, (8)323

crevice corrosion rates on 304, 316L, 904L, (8)305

SCC of sensitized 304 SS in polythionic, (8)333

SCC sensitized 304 in chloride-sulfate, (11)425

sensitization austenitic SS-II commercial purity, (4)132

O₂ + nitrate anions vs 304 in 290C water, (8)313

STEELS, CHROMIUM-NICKEL, AUST.,

316, 316L

crevice corrosion rates on 304, 316L, 904L, (8)305

sensitization austenitic SS-II commercial purity, (4)132

Steels, chromium-nickel, aust., 317: accel tests Cr Ni vs pitting, crevices, (3)98

STEELS, CHROMIUM-NICKEL, AUSTENITIC

passivation of austenitic SS by, (12)491

sensitization austenitic SS-II commercial purity, (4)132

Steels, chromium, ferritic, Cr Mo, other: metallurgical effects on steel vs H₂S, (11)435

Steels, chromium, ferritic, 430 F, FSE: ferric sulfate sensit test modification, (12)469

STEELS, CHROMIUM, FERRITIC, 446

ferric sulfate sensit test modification, (12)469

sulfidation of 25 Cr-Fe in 50-400C H₂S, (6)236

STEELS, CHROMIUM, MARTENSITIC

ferric sulfate sensit test modification, (12)469

pitting-crevice attack 12Cr steel at 80C, (12)483

Steels, chromium, martensitic, 403-414: Si,P vs cracks in 403 SS in NaCl, NaOH, (1)1

Steels, chromium, martensitic, 430-431: ferric sulfate sensit test modification, (12)469

Steels, chromium, martensitic, 440 A, B, C: heat treat vs anodic polar of Cr steel, (12)502

Steels, Ni Cr, Inconel X-782: SCC Cr-Ni-Fe + weld metals in hi temp mat, (10)409

STEELS, Ni Cr, INCONEL 600

AISI 304, alloy 600 vs aqueous S dioxide, (7)279

Cr+N ions vs Cr-Ni Ni Pt 250C water, (10)406

crevice attack on Inconel-steel vs seawater, (9)354

H permeability of nickel and Ni-base alloy, (5)174

intergranular attack alloy 600 in steam, (2)46

SCC Cr-Ni-Fe vs low temp sulfur solution, (10)391

SCC Cr-Ni-Fe vs 20-80C H₃BO₃ + Na₂SO₃, (10)386

STEELS, Ni Cr, OTHER

H permeability of nickel and Ni-base alloy, (5)174

SCC Cr-Ni-Fe + weld metals in hi temp mat, (10)409

STEELS, NICKEL, AMORPHOUS

accel tests CrNi vs pitting, crevices, (3)98

SCC glassy Fe 40Ni 20B in acid waters, (3)91

Steels, other: hydrogen absorption by austenitic SS, (6)207

Strain, mechanical methods, lab testing: Si,P vs cracks in 403 SS in NaCl, NaOH, (1)1

Streicher, accel lab test: ferric sulfate sensit test modification, (12)469

STRESS CORROSION CRACKING

AISI 304, alloy 600 vs aqueous S dioxide, (7)279

disc- cath protection vs disbonded coatings, (9)370

disc- potential caustic conc vs SCC CrNiMoV, (9)363

env + cold work vs SCC of copper-zinc, (5)161

loading mode effects on SCC tests, (11)449

potential, caustic conc vs SCC NiCrMoV steel, (2)66

SCC Al-Cr-Cu-Fe-Mg-Mn-Si-Ti-Zn vs sodium, (10)379

SCC Cr-Ni-Fe + weld metals in hi temp mat, (10)409

SCC Cr-Ni-Fe vs low temp sulfur solution, (10)391

SCC Cr-Ni-Fe vs 20-80C H₃BO₃ + Na₂SO₃, (10)386

SCC glassy Fe 40Ni 20B in acid waters, (3)91

SCC low pressure steam turbine rotor steel, (4)120

SCC of sensitized 304 SS in polythionic, (8)333

SCC of Zr and alloys in nitric acid, (5)167

SCC sensitized 304 in chloride-sulfate, (11)425

sulfide stress cracking of linepipe steel, (9)364

STRESS, ACCEL LAB TESTING

disc- potential caustic conc vs SCC CrNiMoV, (9)363

env + cold work vs SCC of copper-zinc, (5)161

potential, caustic conc vs SCC NiCrMoV steel, (2)66

SCC Al-Cr-Cu-Fe-Mg-Mn-Si-Ti-Zn vs sodium, (10)379

SCC Cr-Ni-Fe + weld metals in hi temp mat, (10)409

SCC Cr-Ni-Fe vs low temp sulfur solution, (10)391

SCC Cr-Ni-Fe vs 20-80C H₃BO₃ + Na₂SO₃, (10)386

SCC glassy Fe 40Ni 20B in acid waters, (3)91

SCC low pressure steam turbine rotor steel, (4)120

SCC of sensitized 304 SS in polythionic, (8)333

SCC of Zr and alloys in nitric acid, (5)167

SCC sensitized 304 in chloride-sulfate, (11)425

sulfide stress cracking of linepipe steel, (9)364

STRESS, ACCEL LAB TESTING

disc- potential caustic conc vs SCC CrNiMoV, (9)363

env + cold work vs SCC of copper-zinc, (5)161

O₂ + nitrate anions vs 304 in 290C water, (8)313

potential, caustic conc vs SCC NiCrMoV steel, (2)66

SCC Cr-Ni-Fe + weld metals in hi temp mat, (10)409

SCC Cr-Ni-Fe vs low temp sulfur solution, (10)391

SCC Cr-Ni-Fe vs 20-80C H₃BO₃ + Na₂SO₃, (10)386

SCC low pressure steam turbine rotor steel, (4)120

SCC of Zr and alloys in nitric acid, (5)167

SCC sensitized 304 in chloride-sulfate, (11)425

sulfide stress cracking of linepipe steel, (9)364

STRESSES, CAUSES

cracking of 304 in low temp acid solution, (8)323

SCC Cr-Ni-Fe + weld metals in hi temp mat, (10)409

SCC of Zr and alloys in nitric acid, (5)167

SULFATES, BASES AND SALTS, CAUSES

etching of Cu ion implanted Al in Cl-sulfate, (4)151

mass transfer effects in filiform attack, (11)452

SCC Al-Cr-Cu-Fe-Mg-Mn-Si-Ti-Zn vs sodium, (10)379

SCC Cr-Ni-Fe vs 20-80C H₃BO₃ + Na₂SO₃, (10)386

SCC low pressure steam turbine rotor steel, (4)120

SCC sensitized 304 in chloride-sulfate, (11)425

Sulfonates, inorganic inhib: surfactants & inhibitors for Al, hi strength steel, (7)253

Sulfur dioxide, causes: AISI 304, alloy 600 vs aqueous S dioxide, (7)279

SULFUR, CAUSES

H permeability of nickel and Ni-base alloy, (5)174

intergranular attack alloy 600 in steam, (2)46

SCC low pressure steam turbine rotor steel, (4)120
sulfidation of 25 Cr-Fe in 50-400C H₂S, (6)236

SULFURIC ACIDS, CAUSES

AISI 304, alloy 600 vs aqueous S dioxide, (7)279
anodic dissolution of Ni-base superalloy, (4)144
anodic films on W in phosphate solutions, (7)266
ferric sulfate sensit test modification, (12)469
ferritic steels with hydrogen vs acids, (4)115
iron effects on zirconium corrosion, (6)218
metal reactions in acids-I iron in mine, (5)204
SCC Cr-Ni-Fe vs low temp sulfur solution, (10)391

Surface preparation: corrosion beneath organic coatings, (5)189

SURFACTANTS, —IVES

inhib chemical cleaning solution for carbon steel, (12)496
surfactants & inhibitors for Al, hi strength steel, (7)253

T

TEMPERATURE: 0 TO 22, 32 TO 72
anodic prot mild steel in nitric acid, (2)55
particle activity-VII hematite on steel, (1)15

TEMPERATURE: 22 TO 100, 72 TO 212
anodic dissolution of Ni-base superalloy, (4)144
anodic prot mild steel in nitric acid, (2)55
carbon steel reactions in permafrost, (9)346
etching of Cu ion implanted Al in Cl-sulfate, (4)151
inhib chemical cleaning solution for carbon steel, (12)496
pitting-crevice attack 12Cr steel at 80C, (12)483
SCC Cr-Ni-Fe vs low temp sulfur solution, (10)391
SCC Cr-Ni-Fe vs 20-80C H₃BO₃ + Na₂SO₄, (10)386
SCC low pressure steam turbine rotor steel, (4)120
Si,P vs cracks in 403 SS in NaCl, NaOH, (1)1
sulfidation of 25 Cr-Fe in 50-400C H₂S, (6)236

Temperature: -21 to 0, 8 to 32: carbon steel reactions in permafrost, (9)346

TEMPERATURE: 100 TO 200, 212 TO 392
disc- caustic conc vs SCC CrNiMoV, (9)363
potential, caustic conc vs SCC NiCrMoV steel, (2)66

SCC low pressure steam turbine rotor steel, (4)120
sulfidation of 25 Cr-Fe in 50-400C H₂S, (6)236

TEMPERATURE: 200 TO 300, 392 TO 572
Ag-AgCl ref electrode for hi temp-pressure, (5)202
Cr + N ions vs Cr-Ni Pt 250C water, (10)406
crevice attack on Inconel-steel vs seawater, (9)354
particle activity-VII hematite on steel, (1)15
SCC Cr-Ni-Fe + weld metals in hi temp mat, (10)409
sulfidation of 25 Cr-Fe in 50-400C H₂S, (6)236

TEMPERATURE: 300 TO 400, 572 TO 752
intergranular attack alloy 600 in steam, (2)46
sulfidation of 25 Cr-Fe in 50-400C H₂S, (6)236

Temperature: 400 to 500, 752 to 932:
ferritic steels with hydrogen vs acids, (4)115

Temperature: -100 to -20, -148 to +8:
cracking of 304 in low temp acid solution, (8)323

Temperature: -273 to -99, -459 to -130: disc- inhibitors for sour gas, (7)296

Temperature: 1000 to 2000, 1832 to 3632:
surface oxide infl on gun barrel wear, (10)384

Temperature: 2000 to 3000, 3632 to 5432:
surface oxide infl on gun barrel wear, (10)384

TEMPERATURE, CAUSES, C,F

accel tests Cr Ni vs pitting, crevices, (3)98
crevice corrosion rates on 304, 316L, 904L, (8)305
Ni vs NaOH under heat transfer condition, (10)399
pH in aqueous CO₂ solution under hi pressure, (2)39

TENSILE STRESSES, CAUSES

loading mode, effects on SCC tests, (11)449
SCC Al-Cr-Cu-Fe-Mg-Mn-Si-Ti-Zn vs sodium, (10)379
SCC Cr-Ni-Fe vs low temp sulfur solution, (10)391
shot peening infl polarization of steel, (11)432

Time, causes: pitting-crevice attack 12Cr steel at 80C, (12)483

Time, testing: marine atmosphere attack, electrochem measurement, (7)291

TITANIUM

arsenic infl on passivation of titanium, (1)13
computer simulation intergranular attack, (6)247

ferric sulfate sensit test modification, (12)469

TRANSGRANULAR CRACKING

env + cold work vs SCC of copper-zinc, (5)161
O₂ + nitrate anions vs 304 in 290C water, (8)313
SCC of Zr and alloys in nitric acid, (5)167
Tungstates, causes: passivation of austenitic SS by, (12)491
Tungsten: passivation of austenitic SS by, (12)491
Tungsten coatings: anodic films on W in phosphate solutions, (7)266

U

Ultrasonic nondestructive testing: passivation of austenitic SS by, (12)491

Underground environments, causes: polar resistance measurement underground rates, (12)475

UNDERWATER ENVIRONMENTS, CAUSES

AISI 304, alloy 600 vs aqueous S dioxide, (7)279
corrosion beneath organic coatings, (5)189
Cr + N ions vs Cr-Ni Ni Pt 250C water, (10)406
mass transfer effects in filiform attack, (11)452
microrial corrosion of aluminum alloys, (1)26
surfactants & inhibitors for Al, hi strength steel, (7)253

V-Z

Velocity, causes: disc- galvanic attack on steel in NaCl, (1)36

Velocity, on-site testing: mass transfer effects in filiform attack, (11)452

Weight changes: anodic prot mild steel in nitric acid, (2)55

X-RAY NONDESTRUCTIVE TESTING

cracking of 304 in low temp acid solution, (8)323
sensitization austenitic SS-II commercial purity, (4)132
Zinc: phosphate precipitation mechanisms, (3)77

ZINC METAL COATINGS

corrosion beneath organic coatings, (5)189
steel, Zn coatings infl on phosphating, (6)213

Zircaloys: SCC of Zr and alloys in nitric acid, (5)167

ZIRCONIUM

iron effects on zirconium corrosion, (6)218
SCC of Zr and alloys in nitric acid, (5)167
structure infl on glassy Cu-Zr alloys, (7)271

